Original Article

The *763C>G* Polymorphism of The Secretory *PLA2IIa* Gene is Associated with Endometriosis in Iranian Women

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Abstract

Background: Endometriosis is a chronic gynecological disease resulting from complex interactions between genetic, hormonal, environmental and oxidative stress and intrinsic inflammatory components. The aim of this study was to investigate the potential association of the *763C>G* polymorphism in the secretory phospholipase A2 group IIa gene (*PLA2G2A*) with the risk of endometriosis in Iranian women.

Materials and Methods: Ninety seven patients with endometriosis along with 107 women who were negative for endometriosis after laparoscopy and laparatomy, and served as the control group, were enrolled for this cross-sectional study. Samples were genotyped using the polymerase chain reaction-restriction fragment length polymorphism method.

Results: Multivariate analysis was used to examine the association between the risk of endometriosis and the *763C>G* polymorphism of *PLA2G2A*. Genotype distributions of *PLA-2G2A* were significantly different between patients and the controls ($p<0.001$, OR=0.22, 95% CI=0.21-0.39). Correlation analysis showed that there was a significant association between the normal homozygous genotype and susceptibility to endometriosis ($p<0.001$).

Conclusion: The present study suggests that the *763C>G* polymorphism of *PLA2G2A* plays an important role as an independent factor in the risk of endometriosis in Iranian women.

Keywords: Endometriosis, polymorphism genetic, *PLA2G2A*

Citation: **Sahmani M, Darabi M, Darabi M, Dabaghi T, Alizadeh SA, Najafipour R. The 763C>G polymorphism of the secretory PLA2IIa gene is associated with endometriosis in Iranian women. Int J Fertil Steril. 2015; 8(4): 437-444.**

Introduction

Endometriosis is one of the most frequent disorders in gynecology that is characterized by development of endometrial tissue outside the uterus (1). Endometriosis affects >10% of all women of reproductive age and >30% of all infertile women (2, 3). The common symptoms of endometriosis are pelvic pain, dysmenorrhoea, dyspareunia and infertility (4). The disease is diagnosed by laparoscopy with or without biopsy for histological diagnosis (4, 5). According to extent, endometriosis is classified as stage I (minimal), stage II (mild), stage III (moderate) and stage IV (severe) (6). Previous studies have demonstrated that oxidative stress and inflammatory activity as well as genetic abnormalities may be associated with the development and progression of endometriosis (2, 7, 8).

Similar to the process that exists in cardiovascular disease, an abnormal lipid profile including increased

Received: 03 Jul 2013, Accepted: 28 Jan 2014
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